

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 664421		FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/007741	International filing date (day/month/year) 28.05.2004	Priority date (day/month/year) 03.06.2003	
International Patent Classification (IPC) or national classification and IPC			
Applicant YANMAR CO., LTD.			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																	
<p>4. This report contains indications relating to the following items:</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/> Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/> Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/> Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/> Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/> Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/> Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/> Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>		<input checked="" type="checkbox"/> Box No. I	Basis of the report	<input type="checkbox"/> Box No. II	Priority	<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/> Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/> Box No. VI	Certain documents cited	<input type="checkbox"/> Box No. VII	Certain defects in the international application	<input type="checkbox"/> Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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International application No.

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-7	YES
	Claims		NO
Inventive step (IS)	Claims	6	YES
	Claims	1-5, 7	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 62-162761 A (Nippondenso Co., Ltd.), 18
July 1987

Document 2: JP 58-197461 A (Nissan Motor Co., Ltd.), 17
November 1983

Document 3: JP 55-116101 A (Nissan Motor Co., Ltd.), 06
September 1980

Document 4: JP 2002-256982 A (Toyota Motor Corp.), 11
September 2002

Document 5: JP 63-38678 A (Nissan Motor Co., Ltd.), 19
February 1988

Document 6: JP 63-259148 A (Mitsubishi Motors Corp.), 26
October 1988

Claim 1

It would have been easy for a person skilled in the art to conceive of employing the configuration of the exhaust gas recirculation device taught in document 2, which is equipped with a means for setting permissible values for the temperature of the mixed gas according to the operation state of the device, a means for comparing the measured temperature values with said permissible temperature values and a means for issuing a warning in cases when the detected temperature values exceed the

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permissible temperature values, in the exhaust gas recirculation device disclosed in document 1, which issues an alarm based on the temperature differential between the temperature of the intake gas and the temperature of the intake gas downstream from the part that connects the intake manifold and the recirculation tube.

Claim 2

In addition to the abovementioned reasons that are presented in relation to claim 1, the feature of controlling a throttle valve that has been provided in the exhaust gas recirculation path is disclosed in document 2.

Claim 3

It is common practice to average the detected values (for example, refer to document 3).

Claim 4

It would have been easy for a person skilled in the art to conceive of employing the configuration of the exhaust gas recirculation device taught in document 4, which diagnoses abnormalities in the exhaust gas recirculation device while the internal combustion motor is in a stable operation state, in the exhaust gas recirculation device that is disclosed in document 1.

Furthermore, the feature of initiating a diagnostic process when the self-diagnosis conditions have been met, which is disclosed in document 1, can be said to correspond to the feature of controlling so as to identify periods when the operation state is

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substantially stable.

Claim 5

It would have been easy for a person skilled in the art to conceive of employing the configuration of the exhaust gas recirculation device taught in document 5, which prohibits diagnosis until after the completion of the warm-up operations, or the exhaust gas recirculation device taught in document 6, which prohibits judgement until the temperature of the engine coolant reaches a prescribed value (corresponding to the completion of warm-up operations), in the exhaust gas recirculation device that is disclosed in document 1.

Claim 6

The invention set forth in claim 6 is not disclosed in any of the documents, and would not have been obvious to a person skilled in the art.

Claim 7

In addition to the abovementioned reasons that are presented in relation to claims 1 to 3, the feature of detecting the temperature of the coolant in order to detect the operation state is disclosed in document 2.